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## Plug-In Electric Vehicles Program Update




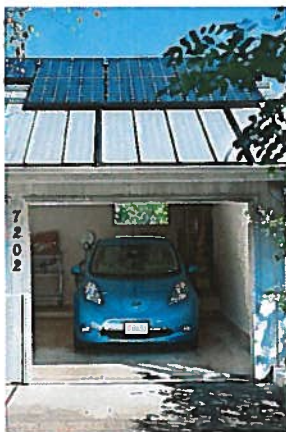
Karl Popham, Austin Energy, Electric Vehicles & Emerging Technologies Manager  
City Council Briefing  
December 6, 2012

## Vision



To realize the environmental, community, utility, and economic benefits; Austin City Council has passed several key resolutions:

- PEV Incentives & Leadership (050301-48)
- PEV Feasibility (040729-78)
- Energy Research, Pecan Street (20080925-084 & 20090806-033)
- Climate Protection (20070215-0232)

Austin Energy PEV programs are fully compliant with COA Resolutions

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## Programs



Plug-In EVerywhere™ - Under \$5/month unlimited "fill-ups" at 148 public stations. 100% GreenChoice™.  
*Public, Workplace, Multifamily, and Fleet Options.*



Plug-in Partners™ - Rebates for Level 2 home-charging.



Texas River Cities EV Initiative - Regional plan to encourage adoption, improve standards, and reduce risk.



Pecan Street EV Pilot - Study the largest, non-fleet EV adoption in the country.



E-Ride Incentive Program - Encourage two-wheel electric transportation.



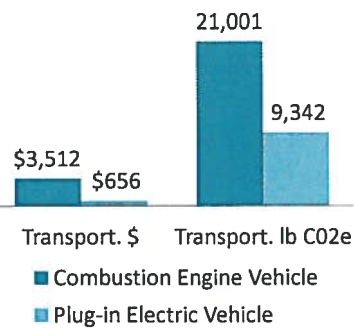
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## A Cleaner, Cost-Effective Choice



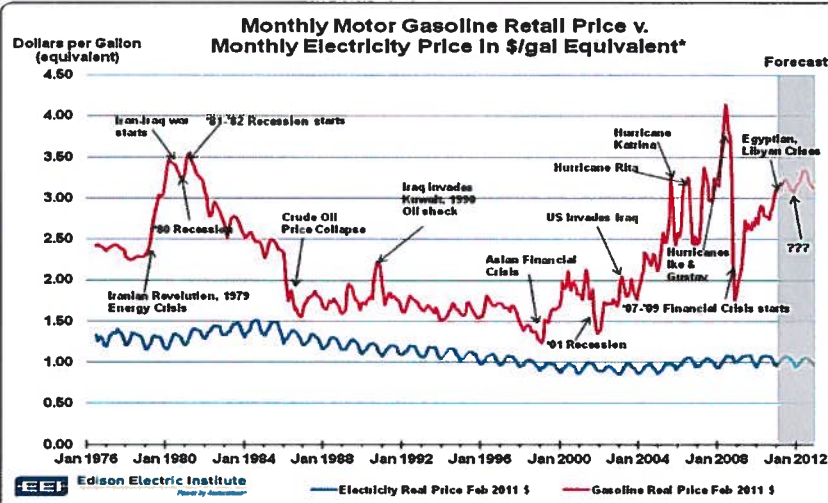
By going all electric, Austin PEV households can save nearly \$3,000 in annual fuel costs and remove over 10,000 lbCO<sub>2</sub>e



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## Cost-Effective & Stable



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## Importance of "Smart Charging"

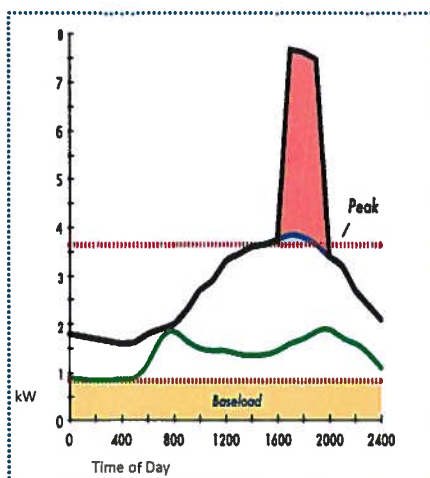


### Charging During Peak (Undesirable):

- Generates more CO<sub>2</sub> from utilizing peak generation
- Higher cost per kWh to provision from energy markets
- May overload transformers

### Charging Off Peak (Desirable):

- Less CO<sub>2</sub> emissions
- Aligns well with wind generation
- Lower cost per kWh to provision
- Significant revenue opportunity



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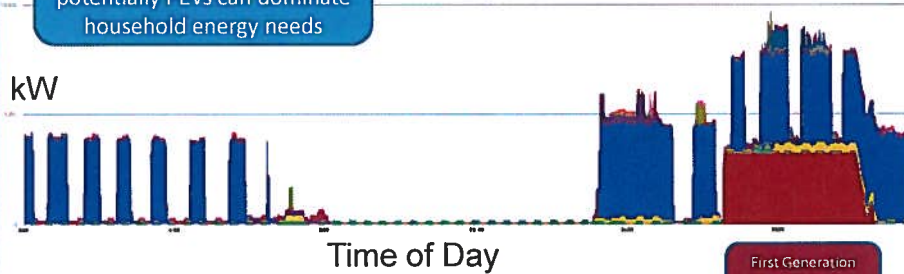


## PEV Charging Data



Real-World data shows that air conditioning and now potentially PEVs can dominate household energy needs

kW



Refrigerator      Microwave / toaster oven      Bathroom 1  
 Living room / TV      Washer / dryer      Bedroom 2  
 Kitchen lights      Dishwasher      Bathroom 2  
 Garage      Master bedroom      Car

First Generation  
Chevy Volt using  
Level 2 @ 3.3kW



Pecan Street Inc.

July 31<sup>st</sup>, 2012 Pecan Street Inc.

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## "Bigger & Faster" Trend



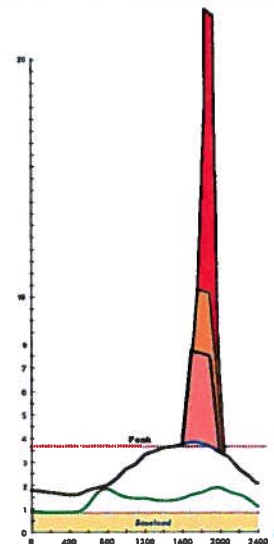
2013 Tesla S  
85 kWh battery @  
19.2 kW charge rate



2013 Nissan Leaf  
24 kWh battery @  
6.6 kW charge rate



2012 Chevy Volt  
16 kWh battery @  
3.3 kW charge rate



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## Addressing Utility Impact



### Currently...

#### Business Models

- New Time of Use & Tiered Rates

#### Collaboration & Outreach

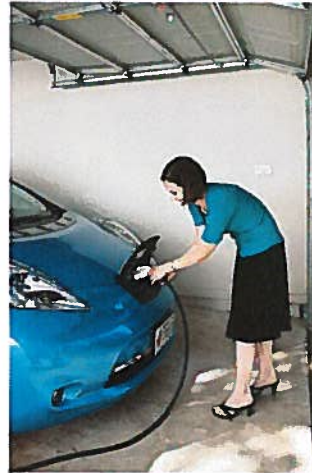
- Electric Power Research Institute
- Texas River Cities EV Initiative

#### New Technologies

- Vehicle and station timers

#### Understanding Consumer Behavior

- Pecan Street, Inc
- Surveys & Studies
- EV Information Exchange



### And In The Future...

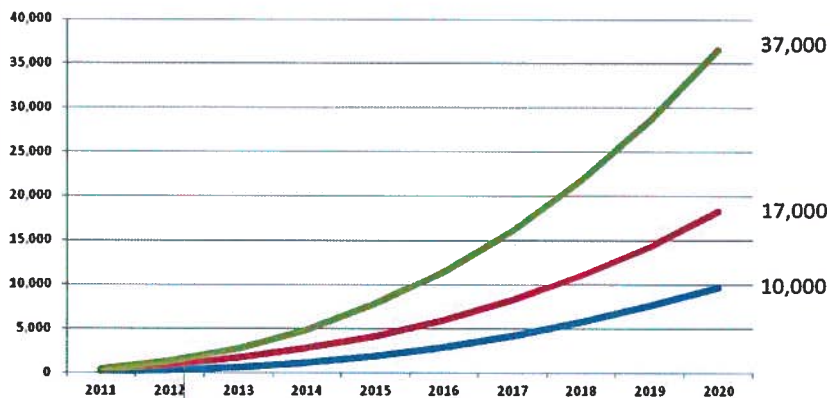
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## Adoption



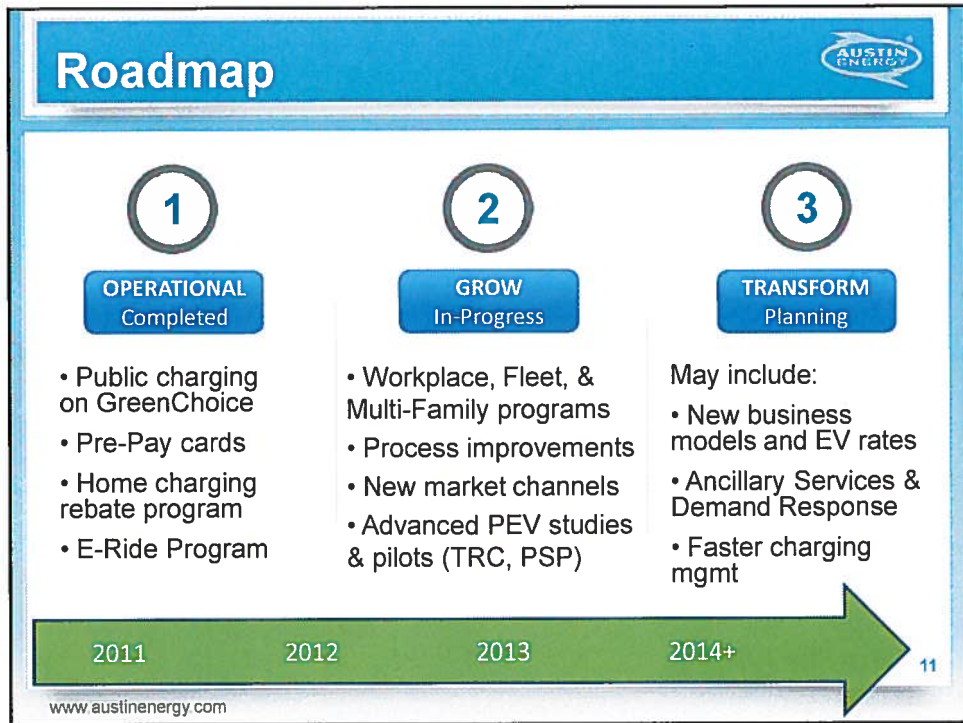
Electric Power Research Institute (EPRI)  
PEV Austin Forecast



211 4-Wheel (615 2-Wheel) PEVs as of July 2012

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# Program Partners (examples)

Workplace Charging Pilot – National Instruments

Car Share PEV Pilot - Car2go

EVSE Installers  
29 registered Electricians

LEAF CLEARANCE EVENT  
Special savings during our leaf clearance event! Also receive a free charge pass with purchase of a new leaf who supplies install. Up to 1 year of free charges at charge pass locations.

Car Dealership Charging Pre-Pay Pilot - Town North Nissan

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## Federal PEV Grants of \$1.6M



### ChargePoint America

2011-2012: \$633k (100% Complete)

Deployed 113 public charging stations.

### Texas River Cities PEV Initiative

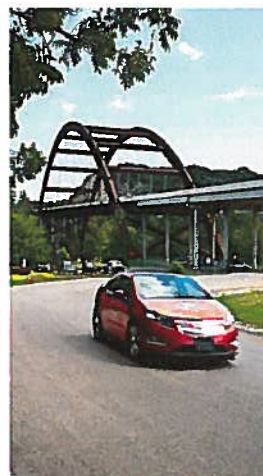
2012-2013: \$500k (80% Complete)

Comprehensive plan, outreach, & open forum.

### Texas Fuel Independence Project

2013-2014: \$500k (Planning Stage)

Execute and expands alternative fuel scope of The Texas River Cities PEV Plan.



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## Texas River Cities Participants



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## Recognition



2012 Top 10 Networked  
Utility North America &  
#1 "coolest" EV project  
—GreenTech Media

2012 "Bronze Quill" for  
Plug-In EVerYwhere  
—International Assoc. of  
Business Comm.

2012 A Top  
EV Friendly City  
—US Electric Drive  
Transportation Assoc.

*"Another way Austin is promoting green driving is by providing over 100 charging stations for EVs." —AOL autos*

*"These cities [Austin, Normal, Los Angeles, Mercer Island] are truly the pioneers of electric drive across America," —Brian Wynne, President of the EDTA.*

*"The utility has earned a reputation as a national player in plug-in vehicles..." —Austin American Statesman*

*"...(Austin EVerYwhere Network) all powered by 100% renewable energy." —US Department of Energy, GreenPower News*

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## Contact



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# Questions?

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